

FLORIDA HIGHWAYS



Along the Indian River on Road 4—Project 36-B.

Vol. II

JULY, 1925

No. 8

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IN THIS ISSUE:

"New Law Regulating Operation of Motor Vehicles in Florida."

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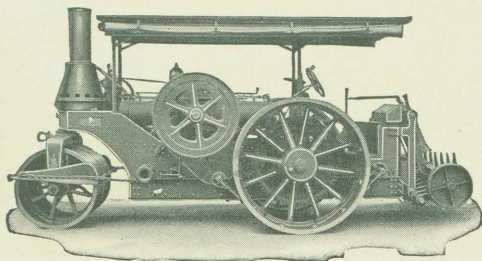
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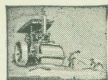
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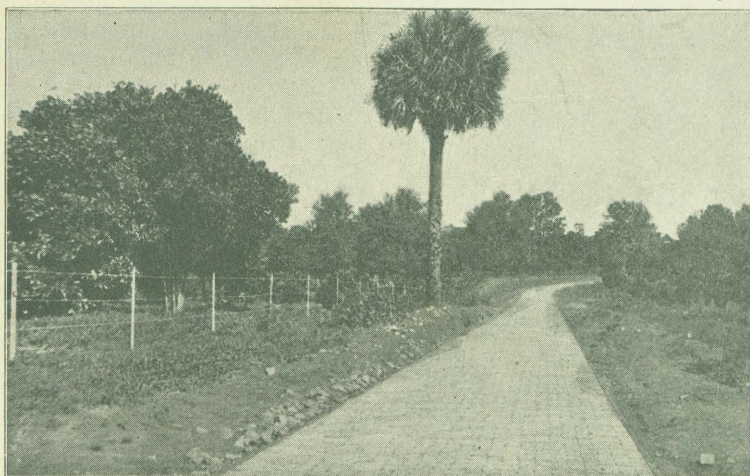
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Some Statistics of Automobile Traffic into Florida

By ROLAND M. HARPER, Geographer, State Geological Survey

With the great increase in the number of automobiles in recent years, and the consequent demand for better roads and more speed, many ferries have been replaced by bridges. A highway bridge across the St. John's River at Jacksonville, where the river is about half a mile wide, was completed in 1921, and as it is a toll bridge, an accurate record of the traffic over it has been kept. The bridge is owned by the county (Duval), and in the annual report of the county commissioners for 1924 there are some interesting statistical data about it. In three and one-half years it has been crossed by over eleven million people (more than nine-tenths of them in vehicles of one kind or another), an average of 9,008 persons and 3,147 vehicles per day.

For the last three months of 1924 a record was kept of all southbound automobiles from other states crossing the bridge, and the number of passengers in them. Every state in the Union, as well as the District of Columbia and Canada, was represented each month. In October there were 9,905 cars with 36,939 persons, in November 16,833 and 62,785, and in December 11,612 and 44,451, a total for the three months of 38,350 cars and 144,175 passengers.

Probably at least half of the automobile traffic from other states to points on the east coast between St. Augustine and Miami crosses the Jackson-

ville bridge, there being no other highway bridge across the St. John's nearer than Palatka, about sixty miles farther south. And the number of passengers by states ought to be approximately proportional to the number of winter visitors to Florida from each state.

It has recently been estimated by the State Railroad Commission that last winter about 500,000 tourists came to Florida in automobiles and 700,000 by trains and boats, making the winter tourist population almost equal to the permanent population (or greater than the permanent white population), but of course that is only a rough approximation, not easy to verify, and all the tourists may not have been in the state at the same time. No exact data on the total number of tourists by states are available, but the states most largely represented as birthplaces of white persons counted as residents of Florida by the census of 1920 are as follows:—Georgia, Alabama, New York, Ohio, South Carolina, Illinois, Pennsylvania, North Carolina, Indiana, Kentucky, Tennessee, Michigan, Massachusetts, Virginia, Missouri, and Mississippi, in the order named.

The winter tourist traffic from the several states is roughly proportional to the number of settlers. The states most largely represented in the traffic across the Jacksonville bridge last October, November and

December, with the number of cars and passengers, and the ratio between them, are as follows:

States	Cars	Passengers	Per Car
Georgia	3,392	12,945	3.81
New York	3,310	13,033	3.94
Ohio	2,601	10,245	3.94
Michigan	2,281	8,620	3.77
New Jersey	2,214	8,600	3.89
Pennsylvania	2,178	8,512	3.92
Illinois	1,957	7,523	3.84
Indiana	1,786	6,584	3.73
Massachusetts	1,677	6,429	3.83
Tennessee	1,475	6,013	4.07
Alabama	1,114	4,405	3.96
North Carolina	1,098	4,096	3.72
South Carolina	981	3,785	3.86

It is very likely that many of the people from Georgia were not tourists in the ordinary sense of the word, but men on business trips; and some of their cars may have crossed more than once in the same direction during the three months, which is not so likely to have been the case with those from more distant states.

It will be noticed that the number of passengers per car is a little less than four in nearly every case; and that is probably approximately equal to the number of persons in the average automobile-owning family in the several states. For the cases where a winter visitor leaves part of his family at home ought to be just about counterbalanced by those that bring friends along. (Most automobiles will easily carry five persons, so that if a tourist does not bring his whole family it must be for some other reason than lack of room in the car.)

The average size of family in the United States in 1920 was 4.35 persons, but it is probably not over 4.3 now, for families have been steadily growing smaller for several decades. And the families that own automobiles undoubtedly average smaller than the rest, for in a given length of time it costs just about as much to maintain and operate a car as to feed and clothe a child. In California, which has as many automobiles as families, the average number of persons per family is only 3.8, which is very close to the average number of passengers per car crossing the bridge. (If families continue to shrink perhaps the number of persons per car a few years from now will be perceptibly less.)

We may next inquire what ratio the bridge traffic figures bear to the total population of the several states; in other words, in what parts of the country the habit of motoring to Florida in winter is most prevalent. Of course in some cases the same persons may have crossed the bridge more than once, but that ought to be more than counterbalanced by the number who went down into the peninsula by more westerly routes. We may also assume without serious error that all the tourists are white, and then calculate the ratio of passengers of white population.

The population of the different states last winter is not definitely known (except for Florida itself, which has just had a state census), but it can be estimated closely enough by assuming that the rate of increase from 1910 to 1920 has continued uniformly since. To make such an estimate for the white

population and white families of every state would take considerable time; so instead of that the states have been assembled into the nine more or less arbitrary groups used by the last two or three United States censuses for many kinds of statistics.

The following table gives for the whole United States and for each group of states (leaving out Florida) the estimated number of persons per white family at the beginning of 1925, the number of passengers per car crossing the Jacksonville bridge in the last three months of 1924, and the ratio of passengers to white population and to the total number of passengers from other states:

	Persons per family	Pass'rs. per car	Ratio of pass'rs. to population	Totals
Whole United States (excluding Florida)	4.3	3.76	.143	100.0
New England	4.3	3.69	.231	12.4
Middle Atlantic	4.3	3.91	.131	21.0
East North Central..	4.2	3.80	.153	24.0
West North Central..	4.2	3.29	.039	3.5
South Atlantic (excluding Florida).....	4.8	3.78	.316	21.1
East South Central..	4.6	3.87	.226	10.5
West South Central..	4.6	3.65	.060	3.7
Mountain	4.1	3.12	.063	1.6
Pacific	3.9	3.29	.052	2.2

It is not at all surprising that the nearest states should contribute a larger part of their population than the more remote ones, but there are other factors involved besides distance. The states mostly largely represented in proportion to their white population seem to be Georgia (0.713%, or about one in 140), New Hampshire, South Carolina, Vermont, Tennessee, Maine, Alabama, Connecticut, Michigan, and North Carolina. Whether or not the tourists who come to Florida by rail would show similar ratios it is impossible to say. States with a large proportion of their white population foreign-born, like Massachusetts, Rhode Island, New York and Ohio, are not so well represented.

The Expert Driver

There was an expert driver

Who always drove with care,

He never had an accident,

He drove most everywhere;

He'd cut across the car tracks,

Dodge pedestrians, or truck;

And getting by the traffic cop,

He always was in luck.

Turning corners on two wheels

He'd seem to be delighted,

When he'd hit the center of the block

And all four wheels were righted.

He'd step upon the throttle

And give her lots of gas:

He didn't care about the cost

For he had lots of brass.

He cut in front of a car one day,

There was a crash, a roar.

He was an expert driver,

But—he isn't any more.

—Exchange.

Reducing Cost of New Motor Roads by Wider Use of Local Materials

How Florida Highway Engineers Are Pointing the Way in Designing Bituminous Sand Surfaces and Local Rock Bases for Highways.

By E. W. JAMES, Chief of Design, United States Bureau of Public Roads.

The Federal Aid Highway System which has been laid out in the United States includes as an important part of it the Federal Aid system in Florida. The mileage of the Federal Aid system of the State consists of 1,883 miles, based on a certified total mileage of public roads of 27,548. This system was approved March 31, 1923.

The construction of this system of roads in whole or in part by co-operation between the State and the Federal Government will mark an interesting point in the history of road development in the State for no State in the Union has presented a greater or more interesting variety of road problems than this peninsula of limestone and sand which bounds the eastern side of the Gulf of Mexico.

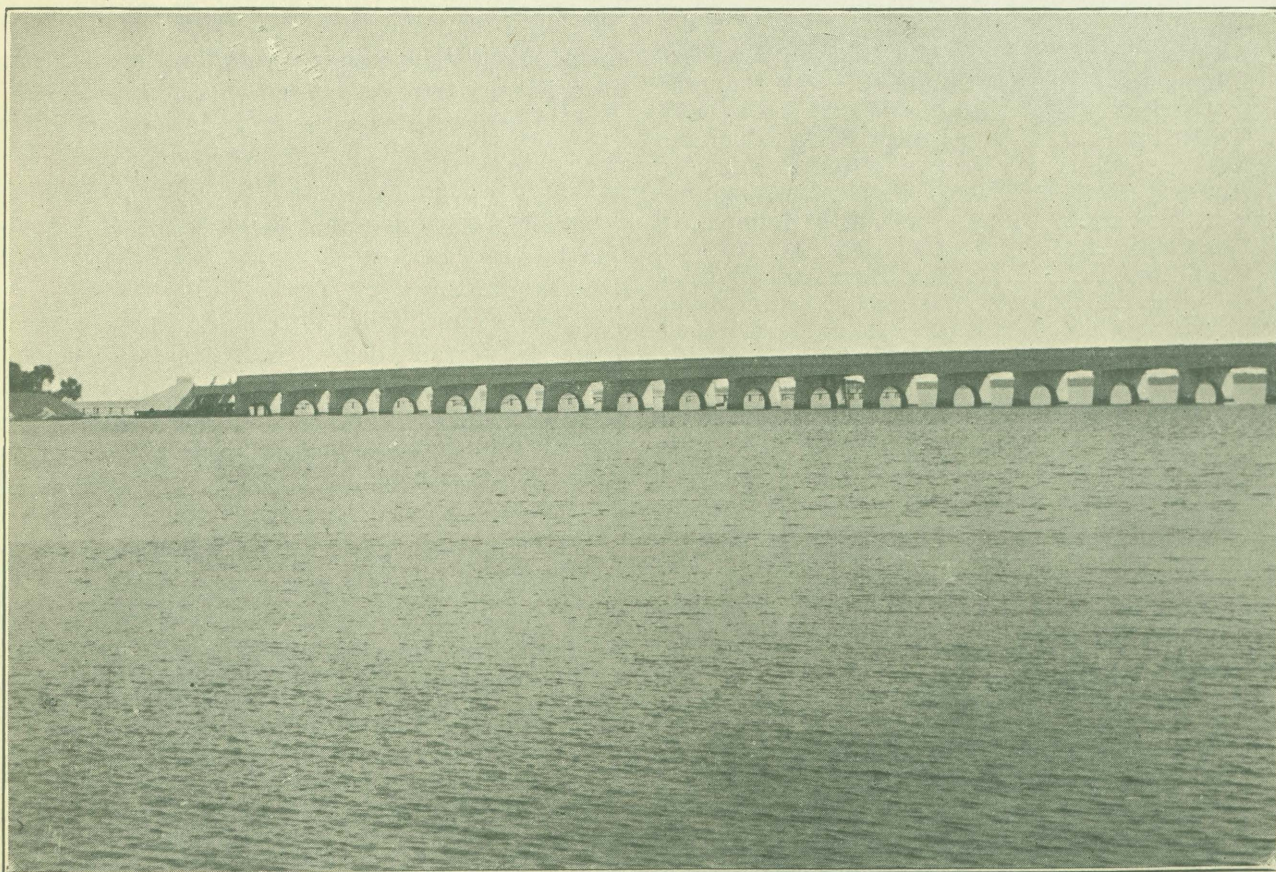
The history of road building in Florida has been the history of development of local materials in such a way that they could be used as the principal ingredients in the construction of Florida highways.

There has been a good deal of experimental work done in an effort to use even planer shavings and sawdust both of which are plentiful in Florida, and

a personal acquaintance of mine has been very active in trying to develop a bituminous block composed of these materials. The great difficulty is that any wood incorporated in the block is almost certain to take up moisture in spite of the insulation furnished by the bituminous material and in consequence swells until the block fractures of its own accord. Other experiments with native materials have, however, been more successful and a large part of the success, I am pleased to say, has resulted from experimental work carried on by the Bureau of Public Roads.

The development of brick construction in the State, though first in point of time is not nearly so interesting as that of other types using more of the natural and local materials and the next development resulting almost simultaneously involved the use of asphalt and either sand or shell. In 1913 a contractor from one of the northern States who was familiar with Florida conditions and who, through residence in the State, realized the difficulty of adequate road construction, built an experimental section of road

(Continued on page 6)



Project 39-A—Sebastian River Bridge.



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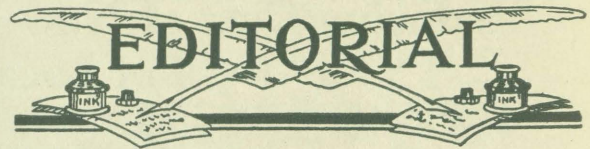
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B. A. Meginniss, Attorney for the Department,
Editor and Business Manager



FLORIDA HIGHWAYS AND THE COUNTY SYSTEMS.

It has long been our dream to present in each issue of this magazine some phase of road construction and maintenance in the various counties of Florida. This is a State publication, it is true, but State Roads and County Roads are so intimately connected as to be actually inseparable.

There is not a foot of county highway construction which does not in some measure affect the State system, and, on the other side, the construction of the State system must inevitably have its bearing upon the county system.

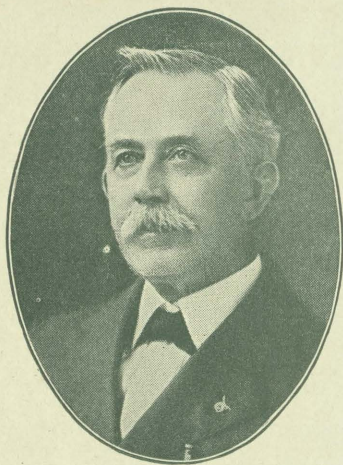
In our first issue, and in many issues since, we have urged upon the various counties the submission of articles touching their road systems. We are not only willing to print such articles—we are keenly anxious to have them. Road work which is being done in counties of Florida is a credit to the State, and we are anxious that the credit which attaches should receive its due recognition by being presented to the country.

It is probably not fully realized to what a large extent this little magazine covers the United States. From its very first issue it has gone into every State of the Union, as well as to many foreign countries. We are proud of the fact that we have one paid subscriber in China. The various counties, therefore, can readily appreciate that the publicity which will thus be given their work cannot fail to be of inestimable benefit.

So far, we have failed to receive this co-operation in any considerable degree. Last month we printed an excellent presentation of the Pasco system, and we are fortunate in being able to announce for our August issue a splendid article on the system of roads in Marion County—a system of which that community may well be proud. The latter article has been prepared for us by Mr. J. E. Walker, County Engineer, and will be illustrated with a number of beautiful views in that county. Mr. Walker is one of the many busy county engineers—when we read his article we wondered if there could be one busier in the whole State. And yet, in his enthusiasm for his work, he has found time to tell of what is being accomplished in old Marion.

It is our sincere hope that others may follow these good examples. We are pleading for an opportunity to present to the world the many excellent features of the county systems of roads.

Chairman's Column



The New Road System Law

The Legislature of 1923 enacted a law (Chap. 9311) designating and establishing a system of State roads. That law provided, in effect, that the State Road Department should first build roads 1, 2, 3, 4, 5, 8 and 19, and that it should be authorized to carry out its existing contracts with the several counties as to the construction of State or State Aid roads, and also that it should be authorized to build any portion of the Federal System of roads (with the exception of Road No. 27, extending from Fort Myers to Miami) not included in the above numbered roads. In some way, Road No. 27 was left out of the list of Federal Aid roads enumerated in the Act of 1923. The effect of the Act of 1923 was to place on the primary or first preferential list, the whole of the Federal system of roads, with the exception of Road 27, as noted above, and roads 1, 2, 3, 4, 8 and 19.

The Legislature of 1925 passed an Act amending Section One of the Act of 1923, which was published in full in our June issue. This Act we will call the "New Law".

This New Law designated a number of additional State roads, extended some others and made a few changes in the routing of two roads. It also corrects the error of the Act of 1923 in failing to name Road 27, from Fort Myers to Miami, as part of the Federal system.

The new law establishes what may be termed a second preferential system of roads, as follows: 5-A, 10, 13, 15, 20, 28, that part of No. 11 extending from the Georgia State line to Monticello, and Road 47. A reference to the law published in our June issue will disclose the location and routing of the new preferential system. The Act provides that construction of the new system shall begin "when that stage of construction has been reached on roads 1 to 5, inclusive, and 8 and 19, when labor and equipment may be transferred from Roads 1 to 5, inclusive, and 8 and 19, that will not delay the construction of said roads 1 to 5, inclusive, and 8 and 19."

In calculating the time when the Road Department will be justified in transferring "labor and equipment" from the first or primary system, to the second system or list of roads, it should be borne in mind that the law authorizes the Department to construct many miles of the Federal system not included in roads 1 to 5 inclusive and roads 8 and 19. The Department is now engaged in building sections of these additional Federal system roads, and will undoubtedly be called on to build other sections of these roads before it will be justified under the law in transferring any of its labor or equipment to the second system.

The new law also contains a provision that the Department shall be authorized to survey and locate any State road, and that when such survey and location is completed a map or plat of such location shall be filed in the Clerk's office of each county through which the road extends.

Another provision of the new law is to the effect that the Department shall be authorized to construct or supervise the construction of any State road in any case where a county or road and bridge district furnishes the entire cost of construction.

The main points of interest in the new law are:

The establishment of a second preferential list or system of roads, which the law contemplates shall be built as soon as the first program or system is completed. The importance of this provision is obvious. These roads on the second preferential list occupy a much more advantageous position than those roads having a designation and number only.

The grant of authority to the Department to supervise the construction of any State road in case a county or district furnishes the means to build the road. This provision is designed to enable the Department to act in those cases where the people wish to have their road funds expended under the supervision of the Road Department.

The grant of authority to the Road Department to survey and locate the line or route of any State road. This is one of the most important provisions of the law. It will be some years before all of the established State roads can be built, but the Road Department can survey and locate many of these roads, and when these locations are made and plats filed in the Clerk's office of each county through which the road runs, the public will know just where the road lines are, the necessary rights of way can be secured, and development and improvements can be made accordingly. In addition, where these locations are made, the counties and districts in many cases will commence building the roads, without danger of wasting their money on an improper route or location.

The Right Answer

Dignified Visitor (at Sunday School)—"Who was least pleased at the return of the Prodigal?"

Bright Boy—"The fat-headed calf."—London Opinion.



One Stage in the Process of Grading a State Road.

REDUCING COST OF NEW MOTOR ROADS

(Continued from page 3)

in front of the Ocklawaha Hotel in Eustis. This type of work had been tried out in Cape Cod by the same contractor under the direction of the Massachusetts State Highway Commission. This was referred to as an oil sand road and consisted of a mixture of natural sand and Standard "C" asphaltic oil. This section of sand oil road created so much interest that other experimental sections were built at Mount Dora, Lakeland, Haskell, Bartow, Brooksville, Dade City, Tarpon Springs, Sebring, Sarasota and Winter Haven. Most of this sand oil surface was laid on the natural sand and without any attempt to construct curbs or artificial base.

In 1915 Lake County issued bonds for \$500,000 for the construction of hard surfaced roads and depending on the experimental work previously done, it was finally decided to adopt what was then referred to as modified sheet asphalt. Under this construction, however, a 4-inch sand clay base was provided in order to give the surface better support. In the fall of that same year, 1915, Polk County also decided to build bituminous sand roads and offered a variety of designs for construction of this type.

It was quite apparent by this time that roads of this type presented a serious objection if they were to be built from the proceeds of large bond issues, and in 1917 the Bureau of Public Roads made a thor-

ough investigation of the work in Polk County at the request of the Commissioners. The general conclusion of the report was that 4 inches of sand-clay composed of the common red or brown ferruginous clay available in many parts of the State was not a satisfactory base, and we recommended to Polk County that nothing less substantial than 4 inches of Bartow marl should be used under the 2-inch wearing surface of modified sheet asphalt.

For comparatively light traffic it is probable that with a base of Florida limestone modified sheet asphalt can be used to advantage in the State. It has by no means been discredited and the State of North Carolina on the other hand has recently constructed a considerable mileage of this type according to an improved design. The North Carolina pavement consists of two courses; the lower course is composed of 3 inches of bituminous sand construction using a natural sand with no attempt to secure standard sheet asphalt grading. On this as a base a 2-inch wearing course is laid with a grading as nearly standard as can be secured without substantially increasing the cost. I have inspected 30 or 40 miles of that work and although it has been done too short a time to permit of any definite conclusions it is certainly giving satisfaction and has every appearance of being a substantial improvement.

Even before the first sand asphalt experimental road was laid in Florida, the Bureau of Public Roads

had been called upon in connection with the McGregor Boulevard between Fort Myers and Punta Rassa, to study the possibilities of treating shell roads with bituminous materials. An Engineer was assigned to the work and in connection with the surfacing of the McGregor Boulevard five experimental sections were oiled. The bituminous material used was the standard for cold surface treatments, having a specific gravity of 0.94, flash point not to exceed 60 and a viscosity of not less than 100, nor more than 150. As the result of these experiments two sections indicated that the methods used were adequate for surface treatments on waterbound shell for such traffic as then prevailed on the McGregor Boulevard. The entire road between Fort Myers and Punta Rassa was treated and served well for about 2½ years without retreatment. The increase of traffic and especially the introduction of heavy passenger buses soon demonstrated, however, that the same difficulties were inherent in surface treatments on shell, that characterized the surface treatments used up on that time on Florida limestone on the east coast.

We next turned our attention to the east coast and in 1913 and 1914 conducted a large number of experiments at Miami, Lemon City, West Palm Beach and on the University grounds at Gainesville; in all about 32 experimental sections were laid, and the object of the work was to develop a satisfactory practice for surface treating or for constructing bituminous macadam using Florida limestone, either as waterbound macadam under surface treatment or as aggregate for the bituminous macadam.

The sections about two miles south of the Court House at West Palm Beach where bituminous macadam had been laid using stone from the Naranja and Ojus pits were unexpectedly successful. We developed a method of constructing bituminous macadam with the corraline limestone so satisfactorily as to warrant our recommending a specific method to Palm Beach County for use with bond funds then available. This method of construction was used from Jupiter Inlet northward to Stuart, and southward to West Palm Beach and Delray nearly to the county line, and for years presented the appearance of a first class sheet asphalt under a rapidly increasing traffic. The same type of construction was finally continued southward and the experiments at Lemon City and on Biscayne Drive near Miami were covered by the new construction. From the Pasco County line north of Tarpon Springs a similar bituminous macadam was built to some point north of Hudson. Bituminous macadam has been used as the result of the practice then developed at numerous points in the State, and appears to be a thoroughly satisfactory type for the development of Florida materials, where the traffic includes but a small percent of heavy trucks. With the development of bituminous macadam construction the demand for Florida rock rose rapidly until the output reached such proportions that it became available for the construction of base as a substitute for concrete base.

From this brief sketch of the experimental work done with Florida materials it appears that two types have been developed; one of which appears to be

satisfactory under reasonably heavy traffic and one satisfactory under light traffic. The bituminous macadam using Florida rock has demonstrated its serviceability for roads as heavily traveled as any in the State. It is probable that this type will not serve where there is a large number of heavy units in the daily traffic but its capabilities of carrying a dense tourist traffic commends it as a satisfactory standard type for use in the State. Its design should be on the basis of a 10-inch completed thickness, the base course being 8 inches.

The bituminous sand or modified sheet asphalt has shown this to be reasonably satisfactory for light and medium traffic when properly supported. The attempts to use ferruginous clay have not been satisfactory on the whole, but material equal to Bartow marl or better can be used and the thickness of the base will, of course, depend upon the probable traffic. As brick was the first type of modern pavement to be used extensively on rural highways Portland cement concrete has become of recent years one of the available types. It is difficult, however, to use concrete satisfactorily with local materials except in a few places in the State. It would be necessary to reduce the requirement for French coefficient of stone to approximately 2.5 and admit the general run of Florida limestone. It therefore becomes necessary to import aggregate for much of the concrete pavement construction and this type accordingly offers no point of peculiar interest as used in the State.

To the road builder Florida has always presented an interesting problem. To build successfully it is necessary to consider not the normal traffic of the State by any means, but the augmented traffic of the winter months when Florida becomes one of the playgrounds of America. It was obvious from the start that in spite of the high natural cementing qualities of the Florida limestone they were nevertheless so fragile and were so easily pulverized that an intolerable dust would result unless artificial binders could be employed. I feel that the Bureau of Public Roads did some of its best and most practical work in developing designs and processes for the use of the native materials and, although at one time we looked upon Florida as a State that was conspicuously lacking in suitable road metal, we find now that Florida quarries are producing a large tonnage of usable stone and that limestone strata on both the east and west coasts are capable of furnishing an almost inexhaustible supply of material which with proper manipulation can be used in constructing and maintaining a considerable part of the road mileage of the State.

Only the Shell

The pastor who was fond of figures of speech was making a funeral oration. He began his address, "Friends, we have here only the shell of the man, the nut is gone."—The Churchman.

To make a monkey out of a man, first get him up a tree.—Greenville Piedmont.

One thing that can't be preserved in alcohol is a secret.—Columbia Record.

Total License and Gas Revenues from Motor Vehicles, 1924

(From Arizona Highways)

State	Number of Automobiles and Trucks	Rank	Revenue from Motor Vehicles	Rank	Average Motor License per Vehicle	Rank	Revenue from Gas Tax	Average Gas Receipts per Motor Vehicle	Average Motor and Gas Re- ceipts per Motor Vehicle	Rank
Alabama	158,019	32	\$ 1,853,289	33	\$11.72	30	\$ 1,510,572	\$ 9.55	\$21.27	18
Arizona	57,828	44	339,721	48	5.87	47	730,846	12.63	18.50	25
Arkansas	142,978	33	2,333,033	29	16.31	14	2,643,535	18.48	34.79	3
California	1,329,394	2	7,011,112	12	5.27	49	12,126,145	9.11	14.38	38
Colorado	213,247	23	1,249,480	38	5.85	48	1,740,152	8.16	14.01	39
Connecticut	215,721	22	5,058,908	14	23.45	2	962,479	4.46	27.91	7
Delaware	35,136	47	604,354	43	17.20	8	302,143	8.59	25.79	10
Florida	210,000	24	2,500,000	28	11.94	29	3,658,677	17.42	29.36	4
Georgia	208,168	25	2,532,147	27	12.16	27	3,361,400	16.09	28.25	6
Idaho	69,305	41	1,287,388	37	18.57	7	545,672	7.85	26.42	8
Illinois	1,132,641	5	11,513,957	4	10.16	35	.....	.....	*10.16	46
Indiana	658,796	9	4,126,058	18	6.17	46	5,537,610	8.40	14.57	37
Iowa	614,347	10	8,995,118	7	14.64	18	.....	.....	*14.64	36
Kansas	410,891	15	3,412,355	22	8.30	41	.....	.....	* 8.30	48
Kentucky	231,784	21	3,281,535	23	14.15	21	1,660,937	7.16	21.31	17
Louisiana	178,000	30	2,884,979	25	15.97	15	1,455,541	8.17	23.14	14
Maine	129,000	36	1,934,360	32	14.99	17	522,298	4.04	19.03	23
Maryland	195,581	28	2,135,311	31	10.91	33	1,042,332	5.32	16.23	34
Massachusetts	672,315	8	8,122,166	10	12.08	28	.....	.....	*12.08	43
Michigan	877,222	6	11,261,282	5	12.85	24	.....	.....	*12.85	41
Minnesota	508,000	14	8,559,130	9	16.85	11	.....	.....	*16.84	33
Mississippi	134,547	35	1,160,730	39	8.62	40	1,385,060	10.29	18.91	24
Missouri	545,155	11	4,525,914	16	8.30	41	.....	.....	* 8.30	48
Montana	80,674	39	776,320	42	9.62	37	632,700	7.84	17.46	29
Nebraska	308,715	17	3,594,437	21	11.64	31	.....	.....	*11.64	44
Nevada	18,327	49	181,961	49	9.92	36	154,415	4.82	18.34	26
New Hampshire	73,633	40	1,522,186	35	20.67	6	587,845	7.98	28.65	5
New Jersey	516,964	13	8,854,808	8	17.12	9	.....	.....	*17.12	30
New Mexico	41,750	46	392,929	47	9.41	38	182,856	4.37	13.78	40
New York	1,420,000	1	24,089,241	1	17.04	12	.....	.....	*17.04	31
North Carolina	305,756	19	7,150,061	11	23.38	3	3,979,855	13.01	36.39	2
North Dakota	117,050	37	816,871	41	6.98	45	442,967	3.78	10.76	45
Ohio	1,256,000	3	11,721,041	3	9.34	39	.....	.....	* 9.34	47
Oklahoma	337,740	16	3,692,898	20	10.93	32	3,174,900	9.40	20.33	22
Oregon	192,615	29	4,766,070	15	24.74	1	2,562,500	13.30	38.40	1
Pennsylvania	1,228,586	4	20,051,021	2	16.32	13	9,089,539	7.39	24.71	12
Rhode Island	95,407	38	1,618,773	34	16.96	10	.....	.....	*16.96	32
South Carolina	163,382	31	1,151,983	40	7.05	44	2,186,136	13.37	20.42	21
South Dakota	142,396	34	2,142,446	30	15.05	16	1,106,634	7.77	22.82	15
Tennessee	204,580	26	2,597,567	26	12.69	25	1,727,604	8.44	21.13	19
Texas	806,000	7	10,474,558	6	12.99	23	3,892,725	4.82	17.81	27
Utah	68,316	42	487,110	45	7.13	43	725,967	10.62	17.75	28
Vermont	61,179	43	1,323,376	36	21.63	5	230,865	3.77	25.40	11
Virginia	262,677	20	3,715,049	19	14.14	22	3,163,999	12.04	26.18	9
Washington	306,002	18	4,475,197	17	14.62	19	2,635,410	8.61	23.23	13
West Virginia	197,746	27	2,874,587	24	14.53	20	1,259,099	6.36	20.89	20
Wisconsin	540,000	12	6,712,637	13	12.45	26	.....	.....	*12.45	42
Wyoming	43,639	45	448,664	46	10.28	34	200,319	4.59	14.87	35
Hawaii	25,449	48	568,515	44	22.33	4	.....	.....	*22.33	16
Total	17,984,830		\$222,842,641	..	A.13.29	..	\$77,121,734	† 8.80	†19.65	..

*No Gas Tax. †Average of 35 states having a Gas Tax. ‡This average also includes states which do not have a Gas Tax.



Suwannee River Bridge, Road No. 2—Proj. 30—Near White Springs, Florida.

Contracts Awarded by State Road Department January 1, 1925-June 16th, 1925

Contractor	Proj. No.	County	Roads Length Miles	Bridges Length Feet	Contract	Type
Atlantic Bridge Co.....	33-B	Escambia .....	....	1570	\$ 289,113.77	Conc. & Steel
R. H. H. Blackwell.....	45	Madison .....	....	910	124,902.27	Conc. & Steel
Langston Const. Co.....	534	Brevard	7.69	....	177,361.80	Rock Base
B. Booth & Co.....	46	Nassau	11.52	....	95,664.77	Grading
Pensacola Shipbuilding Co.	421	Nassau .....	....	560	233,094.18	Steel & Conc.
Luten Bridge Co.....	46	Nassau .....	....	....	52,150.60	Drain. Struct.
Luten Bridge Co.	581	Hillsboro .....	....	....	75,837.26	Drain. Struct.
Barnes & Smith.....	581	Hillsboro	12.10	....	240,237.78	Rock Base
Boone & Wester.....	47	St. Johns	14.96	....	142,934.86	C., G., G. & D. Str
Otis Hardin	647	Highlands	4.00	....	16,720.00	Grade
Whitney Const. Co.....	607-B	Clay	6.68	....	89,200.32	Rock Base
Taylor & Cox.....	617	Alachua	5.17	....	23,656.66	Grade & Drain.
J. R. & J. B. Miller.....	618	Alachua	10.89	....	49,163.26	Grade & Drain.
L. M. Gray.....	628	Volusia	9.92	....	152,099.00	Rock Base
H. E. Wolfe.....	629	Highlands	6.00)	....	156,113.44	Rock Base.
H. E. Wolfe.....	647	Highlands	7.00)	....	16,170.00	Embankment
S. G. Collins.....	638	Santa Rosa .....	.34	....	170,834.20	Sheet Asph.
Sou. Paving Const. Co....	661	Lake	3.52	....	61,077.46	C. G., G.
Taylor Contracting Co....	633	Gadsden	9.67	....	37,984.17	C. G., G.
Taylor Contracting Co....	639	Gadsden	9.83	....	66,840.94	C. G., G.
E. Booth & Co.....	642	Putnam	10.82	....	
Total			130.11	3040	\$2,271,156.74	

U. S. Federal Aid Law

Full Copy of Act Appropriating Federal Aid to the States for Next Two Fiscal Years, Also for Apportioning to State Surplus War Explosives

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That for the purposes of carrying out the provisions of the act entitled "An Act to provide that the United States shall aid the states in the construction of rural post roads and for other purposes," approved July 11, 1916, and all acts amendatory thereof and supplementary thereto, there is hereby authorized to be appropriated, out of any money in the treasury, not otherwise appropriated, the following additional sums, to be expended according to the provisions of such act as amended:

The sum of \$75,000,00 for the fiscal year ending June 30, 1926;

The sum of \$75,000,000 for the fiscal year ending June 30, 1927.

Immediately upon the passage of this act and thereafter not later than January 1, of each year, the Secretary of Agriculture is authorized to apportion among the several states as provided in Section 21 of the Federal Highway act, approved November 9, 1921, the \$75,000,000 herein authorized to be apportioned for the fiscal year ending June 30, 1926, and on or before January 1 next preceding the commencement of each succeeding fiscal year he shall make like apportionment of the appropriation herein authorized, or which may hereafter be authorized, for each fiscal year; provided, that the Secretary of Agriculture shall act upon projects submitted to him under his apportionment of this authorization, and his approval of any such project within three years shall be deemed a contractual obligation of the Federal government for the payment of its proportional contribution thereto.

Sec. 2. For carrying out the provisions of section 23 of the Federal Highway act, approved November 9, 1921, there is hereby authorized to be appropriated for forest roads and trails, out of any money in the treasury not otherwise appropriated, the following additional sums, to be available until expended in accordance with the provisions of said section 23:

The sum of \$7,500,000 for the fiscal year ending June 30, 1926;

The sum of \$7,500,000 for the fiscal year ending June 30, 1927.

Sec. 3. That the Secretary of Agriculture may exchange deteriorated explosives or explosive components, obtained by transfer from the Secretary of War for distribution among the states and for use in the improvement of roads under his direct supervision, for explosives or explosive products in condition for immediate use. The Secretary of Agriculture is further authorized, by contract, or otherwise, to reclaim by reworking, reconditioning, cartridging, or otherwise converting into usable form such deteriorated explosives or explosive components as cannot be so exchanged, and to pay the cost thereof out of available administrative funds authorized by the Federal Highway act approved November 9, 1921,

and acts amendatory thereof or supplementary thereto. The Secretary of Agriculture, in his discretion, may transfer to any department or agency of the Federal government such of the materials required from such exchanges and also such of the explosives or explosive components as may be reworked, reconditioned, cartridged, or otherwise converted hereunder, as may be required by any such department or agency for use in its authorized activities; provided, that the charges incident to the storage, handling, protection, exchange, reworking, reconditioning, cartridging, or conversion of such explosives or explosive components as may be certified by the Secretary of Agriculture to have been incurred against said administrative funds shall be reimbursed, said funds pro rata by the department or agency of the Federal government, the state, or other agency receiving such explosives or explosive products.

Sec. 4. That section 11 of the Federal Highway act approved November 9, 1921, as amended and approved by the acts of June 19, 1922, and January 22, 1923, is further amended by inserting after each place where the words "unappropriated public lands" occur the words "and non-taxable Indian lands, individual and tribal."

Sec. 5. That in any state where the existing constitution or laws will not permit the state to provide revenues for the construction, reconstruction, or maintenance of highways, the Secretary of Agriculture shall continue to approve projects for said state until three years after the passage of this act, if he shall find that said state has complied with the provisions of this act in so far as its existing constitution and laws will permit.

Sec. 6. All acts or parts of acts in any way inconsistent with the provisions of this act are hereby repealed and this act shall take effect on its passage. Approved February 12, 1925.

PERMANENT ROADS?

There are no permanent roads. Even the high class \$20,000 a mile road requires maintenance.

ELASTIC POCKET SCALE IS SOUVENIR OF CAREY

Cincinnati, O.—A handy pocket scale of sturdy white celluloid containing much valuable information for the engineer and contractor has been designed and is being distributed free to interested parties by the Philip Carey Company of this city. This pocket souvenir contains inch scales divided into various units, a table of quantities of materials required to make one cubic yard of concrete, a table of inches and fractions in decimals of one foot and data on Elastite expansion joints. The reward in the way of advertising accruing to the Carey Company from this handy device should be great for it will undoubtedly prove to be much consulted.

THE DIFFERENCE

(An Editorial by the Editor of The Nation's Highways)

THERE is a marked difference between a Fault Finder and a man who offers constructive criticism.

The Fault Finder is the indiscriminate and irresponsible talker who really gets more joy out of finding things wrong than it would be possible for him to experience if he found them right. He has no practical remedy for the wrongs of which he complains, his criticisms are invariably founded upon mis-information, and he utters them with a total disregard for the irreparable damage his words and thoughtless carplings may do to the characters of the men or set of men he complains of.

Men of this character form the major liability that our republican form of government has to carry.

Of an entirely different class is the man who has some constructive criticism to offer. He knows what he wants and he has what he believes to be a remedy for the wrongs of which he complains. One of his first steps is to honestly seek correct information, and his next step is to place his complaints fairly before the man responsible for the wrong. What he really desires is the correction of the wrong and not the satisfaction of making the complaint.

This man gets far more pleasure out of commending than he does out of condemning, and by his methods he builds instead of assassinating characters.

He is an asset instead of a liability to his community as well as his government, and were it not for the preponderating number of his class in America the nation would not be safe.

Building and maintaining a system of state highways is a Herculean task, it never has been done and never will be done by any man or set of men without some mistakes. The man who really wants to see the job done with as few mistakes as it is humanly possible to avoid, will be free to offer to the State Highway Commission constructive criticism, and the Commission courts criticism of this character.

Taxes in Oklahoma can be reduced twenty-five per cent and public service improved twenty-five per cent if the men and women of this state will cultivate the habit of speaking the truth to and of their county, state and city officials.

On Life's Highway

The highway of life is much traveled,
And it's strewn with various things;
There's wreckage that's mingled with flowers,
There's men that are common, and kings.

There're plodders and trucks of our commerce,
Joyriders and plain travelers, too;
There are good men and bad men upon it,
There are many like me, or like you.

Some seem not to know where they're going,
Some seem on some great mission bent;
Some falter, some hasten but stumble,
And the air with their wailings is rent.

Let us stop when fellowman wobbles,
If some fate has punctured the tires
Of his conveyance upon the great highway,
And loan him our sympathy pliers!

May be a "blowout" of ambition—
Perhaps his nerve batt'ry's run down;
Let's give him a lift, now, my brothers,
Don't pass him with a sneer or a frown.

May be he's footsore and weary,
Being a plodder on foot and alone,
Don't dash madly by in your pleasure
With thoughts as for only your own.

Lend a hand to him in the mudhole,
Lift him up and put shoes on his feet—
There's joy, yea reward, in such service,
And there'll be smiles again when you meet.

Let's help to keep clear all the wreckage
And obstacles that 'rise in the strife
Of mixed traffic, confusion and struggles
On this wonderful highway of life.

—Herb Lewis, Gravette, Ark.

Florida's Law Governing the Operation of Motor Vehicles

CHAPTER 10186—(No. 164).

AN ACT to Regulate the Operation of Motor Driven and Other Vehicles on the Public Highways of the State of Florida and to Provide for the Enforcement and Punishment for the Violation of This Act.

Be It Enacted by the Legislature of the State of Florida:

Section 1. No person shall operate a motor vehicle upon the public highway of this state recklessly, or at a rate of speed greater than is reasonable and proper, having regard to the width, traffic, and use of the highway, or so as to endanger the property of the life or limb of any person; provided, that a rate of speed in excess of twenty-five miles per hour in the residence portion of any city, town or village, and a rate of speed in excess of fifteen miles per hour in the business portion of any city, town or village, and a rate of speed in excess of forty-five miles per hour on any public highway outside of the corporate limits of any incorporated city or town of motor driven vehicles weighing less than five thousand pounds shall be deemed prima facie evidence of reckless driving. That a rate of speed in excess of fifteen miles per hour in the residence portion of a city, town or village, and a rate of speed in excess of ten miles per hour in the business portion of any city, town or village, and a rate of speed in excess of thirty miles per hour on any public highway outside of the corporate limits of any city or town, of motor driven vehicles weighing more than five thousand pounds and less than sixteen thousand pounds shall be deemed a violation of this Section; that a rate of speed in excess of ten miles per hour in the residence portion of any city, town or village, and a rate of speed in excess of eight miles per hour in the business portion of any city, town or village, and a rate of speed in excess of twenty miles per hour on any public highway outside of the corporate limits of any incorporated city or town, of motor driven vehicles weighing more than sixteen thousand pounds shall be deemed a violation of this Section; that the speed of all motor driven vehicles shall be reduced on

curves in such manner as to keep the vehicle under the entire control of the driver, provided, further, that no persons shall operate upon the public highways inside the incorporate limits of any incorporated city or town of this state a motor vehicle with muffler cut-out open.

Sec. 2. All motor vehicles shall be provided with lights in front and light in the rear. The front or driving lights shall be of the tilting variety or some other device which will kill the glare of the driving lights.

Sec. 3. It shall be unlawful to stop any motor vehicle on the public roads, for either convenience or repair, but in all cases where possible to do so shall turn off the road to the right and the left wheel nearest the center of the paving shall not be more than one foot on the side of the paving. All vehicles shall drive on the right side of the road except when passing a slower vehicle.

Sec. 4. It shall be unlawful to operate upon any hard surfaced road in Florida any log cart, tractor, well machine or any steel tired vehicle other than the ordinary farm wagon or buggy, or any other vehicle or machine that is likely to damage a hard-surfaced road except ordinary wear and tear on the same.

Sec. 5. It shall be unlawful for any officer in the discharge of his duties, as provided for in this Act, to demand an excessive appearance bond and in all such cases the gravity of the offense committed shall be considered in the requirement of such appearance bonds.

Sec. 6. It shall be unlawful for any city or town to pass or attempt to enforce any ordinance in conflict with the provisions of this Act. Provided, however, that this act shall not apply to school zones.

Sec. 7. Any person convicted of the violation of any of the provisions of this Act shall be guilty of a misdemeanor and upon conviction shall be punished by a fine of not more than One Hundred (\$100.00) Dollars or by imprisonment for not more than ninety (90) days, or by both such fine and imprisonment.

Sec. 8. All laws and parts of laws in conflict herewith are hereby repealed.

Sec. 9. This Act shall take effect upon its becoming a law.

Approved June 8, 1925.

ROADS TO LAST

Hordes of autos now remind us
We should build our roads to stay,
And, departing, leave behind us
Highways that don't wash away.

When our children pay the mortgage
Father made to haul their loads,
They'll not have to ask the question,
"Here's the bonds, but where's the roads?"

If the majority really rules, the locomotives would have to stop at the crossings for the flivvers.—Arkansas Gazette.

DOING HIS BIT

During the recent Prohibition plebiscite in Ontario, a prominent Ottawa man, who is an ardent prohibitionist, was surprised by a visit at his office of his small barelegged son.

"Hullo, young man," the father said. "What brought you to town?"

"I was in a parade," the little boy said proudly.

"What parade?" asked the father.

"I don't know," he answered; "but I carried a big sign."

"What was on the sign?" asked the man curiously, and almost collapsed as his son replied:

"MY FATHER'S A DRUNKARD! I've got no shoes!"—Everybody's.

Florida High School Student Wins State Honor

Perhaps no subject could have had a closer personal appeal than that assigned the high school students of the United States for discussion in the 1924 national good roads essay contest. "The Relation of Improved Highways to Home Life" proved of deep interest to more than 250,000 high school contestants. It followed in logical sequence the subject for 1923, when students wrote essays on the subject, "The Influence of Highway Transport Upon the Religious Life of My Community."

It would seem abundantly to fulfill the earnest purpose of the founder, Harvey S. Firestone, of Akron, Ohio, who is desirous that young men and women of the United States be encouraged to study highway transport in its relation to the various phases of our national life. That encouragement is given in the form of the Harvey S. Firestone Four Years University Scholarship which is awarded annually to the student who writes the best essay on the subject assigned. The scholarship is intended to provide tuition, room, board, books and special fees at any college or university in the United States chosen by the successful contestant.

The contest is conducted each year under the auspices of the Highway Education Board, Washington, D. C., of which the United States Commissioner of Education is chairman. It is strictly educational in character and in the several states is sponsored by one of the leading universities, or by the state department of education.

The essays winning state honors in the 1924 contest have been published in pamphlet form and conspicuous among the number is the contribution from a Florida student, as follows:

THE RELATION OF IMPROVED HIGHWAYS TO HOME LIFE

By Forrest Heddon, Seville, Florida

"The hard road is coming right past our place," calls father as he steps upon the porch. A new spring in his stride and fresh hope in his voice.

"Then Harry can go to high school and we can get to church more regularly," exclaims mother, as she rushes out followed by the clamoring children.

"Maybe we'll get a new car and go somewhere once in a while," suggest the older ones.

"It will certainly raise the value of our place and save me time and money," declares father.

Like magic the good news fills the whole family with ambition to clean up their neglected grounds. By the time the new road is finished, fresh paint covers the old weather-beaten boards. Those rotten steps in front have been replaced. Chicken coops and the ragged wood pile, that used to scatter its chips all over the yard, have been moved out of sight. In their place, flowers and shrubs add beauty to a good lawn. So neat and pleasant has the home become that all take great pride in its appearance.

Soon prosperity with golden fingers touches the home by the side of the road. The income from the farm is increasing. The new highway enables father to reach a better market in less time. Where he could

travel only five miles per hour on the old dirt road, he now makes sixteen. Since the hauls are shorter, his produce, less damaged by the journey, commands a wider market and a better price. Moreover, the hard road has reduced the cost of transportation since the distance traveled per gallon of gasoline has increased one hundred per cent. Mother, too, cuts big slices from the family expenses by advantageous buying in larger stores. Each morning car loads of people hurry past to work in schools, factories, and offices, or rush in the opposite direction to harvest fields. One man drives thirty miles to manage a large freight office, yet can spend the night with his family in the far away village. In fact, at least eighty per cent of those living along the hard road for a distance of twenty miles use it for business purposes. Thus the improved highway helps to relieve the pressure of unemployment, and brings security and comfort to many American homes by decreasing their cost of living and increasing their earning capacity.

The improved highway also lessens mother's drudgery and fills her life with variety. She returns from shopping or club meetings full of new plans which make her once tedious work a joy and add many attractive touches to the home. She is happy because father is delighted with his progress and his pleasant home, the children are developing in good schools, and the old boys less restless and more contented. She meets little annoyances with a smile and fills the home with love and sunshine.

Gradually other neighbors settle near the home by the side of the road. Factory hands, college professors, merchants, bookkeepers may change the heat of the crowded streets for a more wholesome environment, and still not lose the advantages of city shopping, churches, schools, theaters, libraries, and social gatherings. Homes can now be located along the highway according to the tastes of the owner; the congestion of the city is relieved; rents go down; and perhaps in time the dreadful slums become less crowded.

In leisure hours the improved highway invites to more wholesome recreation. Mothers of the city spend less time gossiping, and with their children visit lakeside and farm. Father can slip away for that longed-for hunting or fishing trip. Many expeditions for the whole family are now possible. Community gatherings, growing frequent, promote a better social understanding. Town and country become one big neighborly family united by the good road. How much richer has life at home now become!

Best of all, the improved highway keeps the family together. Though many miles separate them during the day, all return over the good road for mother's sympathetic encouragement and father's kindly advice. If the improved highway "keeps 'em down on the farm," if it raises the standard and preserves the integrity of the American home, is it not worth the cost?

How does a weak tires know you are all drest up and ready for a party?—Windsor Border-Cities Star.

NORTH CAROLINA INVESTIGATING PRES- SURE ON PIPE CULVERTS

The vertical pressure transmitted to pipe culverts through earth fills is the subject of an experimental investigation which has been under way for some time by the North Carolina State Highway Department in co-operation with the University of North Carolina.

The experiments are being conducted with full-sized pipe, which are covered with fills of various materials to depths ranging up to 20 ft. The earth fill rests on the upper semi-circumference of the pipe. Two concrete slabs in the plane of the horizontal diameter support the soil at the sides of the pipe and allow the space beneath the pipe to remain open for the weighing apparatus, which consist of four Riehle testing machines.

The investigation is being carried on at Chapel Hill, N. C., under the direction of Dean G. M. Braune.

ARE YOU OR ARE YOU NOT?

The Driver who leaves the curb or parking space without signalling.

The Driver who blows his horn at street intersections and feels that his duty has been done towards pedestrians crossing at that point.

The Driver who deliberately assumes the Right of Way when he is wrong or because the other car doesn't look as good or as large as his.

The Driver who thinks because he is on the outskirts of the city that he can pass a street car on the left.

The Driver who forgets the other fellow when he parks his car in one of the few available places and takes up room enough for two cars.

The Driver who passes the car ahead at the top of a hill or going around a curve.

The Driver who thinks his horn is an ornament and passes the fellow ahead by speed alone.

The Driver who depends upon his brakes in the emergency, which often arises at the blind intersection of street or highway.

The Driver who drives down the middle of the road.

The Driver who doesn't drive according to the Golden Rule.

The Driver who THINKS the children are NOT going to run out into the street.

And—the Driver who mixes gasoline and alcohol.
—Illinois Motorist.

SLOGAN FOR AUTOMOBILES

The following are credited to a fifteen-year-old girl in Detroit:

Drive right and more pedestrians will be left.

Watch your step on it.

Taking the other fellow's dust is better than "to dust returneth."

Six feet have awaited many a driver who wouldn't give an inch.

Just because you see its track is no sign that a train has just passed.—Contractors' and Engineers' Monthly.

Builders

By ROBERT SHAILOR HOLMES

Like surging brooks that score the mountain-side,
Or sluggish streams that sleep in valleys wide
The thoroughfares along which humans plod,
Upon the tortuous trail from earth to God,
Are some laid in the mountains' grand domain
While some run easy courses through the plain.

And every one may choose the way to go;
A few will take the high; the crowd the low;
It takes great strength to climp the mountain steep
And blaze a path, while multitudes like sheep—
A careless throng, content—move through the vale
And scoff at those who tread the harder trail.
But flowers grow along the grassy plain,
And crops are tall, fed by abundant rain,
And fields are smooth—stumped by the pioneer;
And life is calm for all the dwellers there.
Where others planted they're content to reap—
Content that they've a place to eat and sleep.

The few upon the high road, staunch and strong,
Are folk of will who speed the world along
In ways of progress; folk of courage, too,
Who dare forsake the old and try the new;
The folk of brawn and brain and kindly heart
Who get—but give mankind the larger part.

It takes a million years a world to build;
It takes a million leaders brave and skilled,
A million souls who dare to stem the tide
And pioneer, though millions may deride.
Ah, Citizens, your flag was never furled,
Are you of those who dare to build a world?
—Sunshine Magazine.

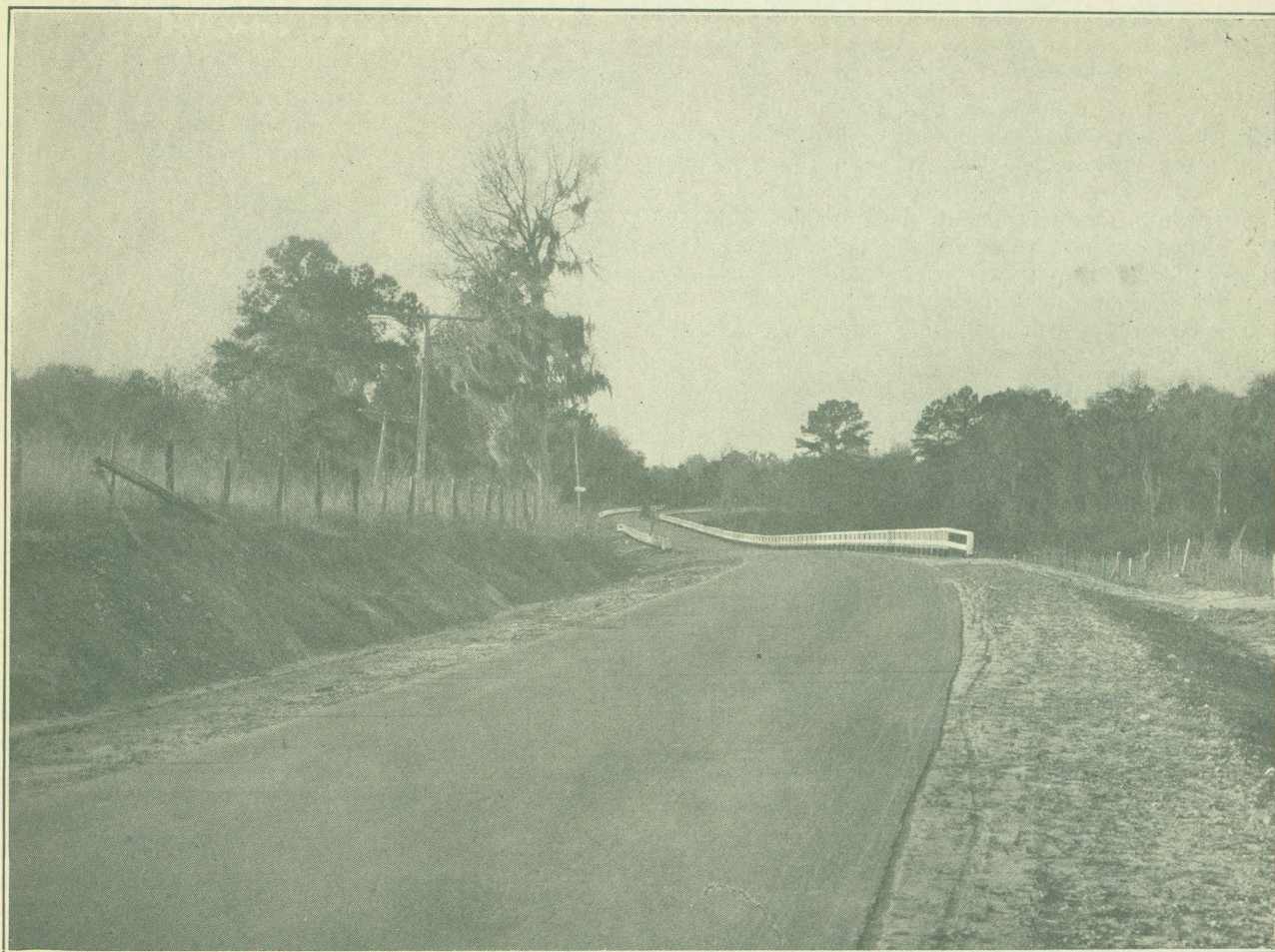
TRAFFIC MOVES TOWARD CENTER ON LIGHT DOWN GRADES

The only tendency clearly recognizable in connection with the distribution of the traffic on grades is a slight movement toward the center of the road on the downhill side of light grades. The tendency is not observed on heavy grades, but is apparent in practically every instance on grades of 1 or 2 per cent. The explanation which has been advanced to account for this phenomenon and which seems plausible, is that the vehicles are driven on light grades at practically the same speed as on the level, but that the drivers, sensing, the slightly increased danger, take the precaution of moving away from the edge. On heavy grades the drivers almost invariably reduce speed, and at the lower speed the instinctive fear of the edge is lessened.—Public Roads.

Awaiting Orders

The station master on the East Indian Railway had been given strict orders not to do anything out of the ordinary without authority from the superintendent. This accounts for his sending the following telegram:

"Superintendent's Office, Calcutta:—Tiger on platform eating conductor. Please wire instructions."—Jewelers' Circular.



Road No. 2 Near Micanopy.

The National Motorists' Association Southern Motorcade

By THE EDITOR, Illinois Motorist

Elaborate preparations are being made for the gigantic motorcade to the south, conducted under the auspices of the National Highways Association, the National Motorists' Association and the Illinois Automobile Club, which will leave Chicago on or about October 1, with the termini at Gulfport, Miss., and Cedar Keys, Fla. This caravan which will consist of several hundred automobiles, is being sponsored and approved by the two national associations in conjunction with the Illinois Automobile Club, in the interest of good roads and for the development of motor travel to the south. Those of our readers who will join us in this wonderful trip to the southland will discover a new world—experience new joys and learn just what the south has in store for you.

This is not a road marking scheme sponsored by professional promoters. The route to be followed will be over the nationally known highways, such as the Bankhead Highway, the Egyptian Trail, the Florida Midwest Highway, the Florida Short Route, the Jefferson Davis Highway, the Magnolia Route, the Mississippi River Scenic Highway, et al.

This motorcade is not being operated for profit or financial gain. It is not being controlled by any

commercial groups. Its sponsors have no mercenary or ulterior motives, but are actuated by their interest in fostering the development of motoring generally, and the improvement of highway conditions. This project will greatly benefit the territory through which the caravan will pass. The National Highways Association, the National Motorists' Association and the Illinois Automobile Club are entirely devoid of even the slightest taint of commercialism, and are organizations of international reputation, which must be maintained.

All along the route of this motorcade the different communities are making arrangements to entertain all the motorists in the caravan with picnics, barbecues, public dances, etc. Committees are being appointed all along the route and special arrangements being made to meet the caravan at the outskirts of the various communities and escort it as far as possible beyond their particular territory. To the motorists participating in this event the true meaning of just what southern hospitality really is will be a revelation to the tourist of the north.

All along the route from Chicago on down one will find National Motorists' Association hotels, service

stations, motor clubs and information bureaus, all organized and maintained for but one purpose, that of serving the motorist.

Requests are coming in daily from the various towns through which the motortrade has been routed, asking for full information regarding the number of cars that are expected to make the trip and just what form of entertainment shall be provided for the guests. Others write in and specify just what they will have in store for the motortradians, and judging from the information that has already been received, everyone making this trip will have the time of their young lives.

If you have not already planned your vacation it will pay you to make your plans for the fall of this year and join with us in one of the pleasantest vacations you have ever enjoyed. The autumn makes an especial appeal to many tourists, and is constantly increasing in numbers. In October the gorgeous foliage of the hills, in their garb of red and golden brown, mingling here and there the darker hues of the evergreen, is a never-to-be-forgotten picture, while the crisp cool days of fall with their bracing air but add zest to the joy of motoring amid such an unrivalled setting. This you can enjoy as far as the Mason and Dixon Line, then, from there south the beauties of the regular northern summer await you and you will marvel at the changes of scenery; the foliage is again green, the flowers in full bloom, the fruit on the trees, the air is getting warmer, the sun more bright and lo and behold you are again in the midst of another summer.

Such a diversity of scenery is seldom found on any one trip, and the motorist who had never experienced anything like this will get a thrill that will long be remembered. You will forget all the worry of city life and business cares even in the short three weeks that you will be gone.

Mr. Frank J. Kroulik, the editor of this magazine, will leave Chicago on or about June 15th for a tour of the route that is to be followed by the motortrade this fall. He has been delegated by the National Motorists' Association to complete arrangements for the reception and entertainment of the members of this caravan and everything will be done to insure comfort for the participants from the time they leave Chicago until disbanded at Gulport and Cedar Keys. Mr. Kroulik will be accompanied by Richard Gantstrom, a representative of the National Pictorial and Publicity Bureau who has been authorized by the sponsors of this event to make moving pictures of the various towns and places of interest along the route.

For one of the most delightful, educational and economical vacation trips you have ever had, make your reservation for a good spot in the caravan by sending in your name and address, number of people in your party, make of car and membership number to the Editor, *Illinois Motorist*, 2819 South Michigan Avenue, Chicago, Ill.

Someone invents a device that measure's a candle's heat five miles away and somebody else in the Department of Labor has another that detects a one-half of one per cent reduction in food prices. —Detroit News.

Many Highway Routes

From information furnished to the Committee of Federal and State highway officials, appointed recently by Secretary of Agriculture Gore, to develop a uniform method of numbering and marking highways, it finds there are at least 356 named routes and 97 different associations, each promoting one or more named highways.

Overlapping of routes is common. In fact, there are few that are not coincident with some other route at some portion of their length. One route 1,500 miles long overlaps other routes for 70 per cent of its length. Ten different routes are involved in this overlapping and in places two or three of them coincide for several miles.

On another route eight different sets of markers, indicating as many named routes, are found on the same stretch of road and this overlapping occurs in so many places that on a map showing all the routes it is difficult to follow the location of one route. Some of the routes have branches and alternate routes between different points, all bearing the same name. The great use made of highways would seem to demand that each main traffic artery have only one designation throughout its entire length, without changes at State lines, and that the mileage comprising the route be selected with reference only to the flow of travel.—Western Highways Builder.

Extraordinary Roads

The American motorist will find in his touring trips that the United States has some of the most distinctive as well as the most unique highways in existence. Mr. Lee of the Asphalt Association, whose hobby is collecting old notes on roads, vouches for the fact that the United States possesses the longest paved motor road in the world, the Pacific Highway, running from Vancouver, B. C., along the Pacific coast to the Mexican border, a distance of 1,476 miles.

In this country also is to be found the highest motor road in the world—that on Pike's Peak, in Colorado, 14,109 feet about the level of the sea. Nevada Avenue, Colorado Springs, Colo., 6,343 feet above sea level, is the highest paved street in the world, and Market Street, Philadelphia, is the widest.

The shortest and narrowest paved motor road in existence is likewise in America. It traverses Smith's Island, one of the little islands in the lower Chesapeake Bay near Christfield, Md. This road is less than a mile long and is just wide enough to permit the passage of one motor car at a time. At intervals, there are sidings, or "passing tracks" where the cars pass each other.

In this country is to be found not only the most unique paved street in the world, but three of the world's most beautiful and famous paved mountain roads—the Columbia River Highway, in Oregon; the Storm King Highway, which overlooks the Hudson River and "America's Valley of the Rhine" from the Peekskill Mountains in New York, and the

Motorists Paid \$80,000,000 in Gas Tax Last Year

Nearly \$80,000,000 was collected from the motorist in the form of gasoline taxes in the year 1924 and was used or is available very largely for road maintenance and construction according to the Bureau of Public Roads of the United States Department of Agriculture. Thirty-five of the 48 states and the District of Columbia imposed a tax, the rate ranging from 1 to 3 cts. per gal. in all states except Arkansas which levied a 4-ct. tax.

The total amount collected during the year was \$79,734,490, and of this amount \$48,711,326 was made available for road construction and maintenance under the supervisions of the state highway departments. A large share of the remainder was turned over to county and local road funds. In a few states a portion is turned over to general funds, school funds, and for miscellaneous purposes.

GASOLINE TAX RATES, GROSS RECEIPTS AND AMOUNT OF REVENUE APPLIED TO STATE ROAD WORK

States	Tax rate per gal. on Dec. 31, 1924 cents	Gross receipts, 1924	Amt. applied to road work under supervi- sion of state high- way departments
Alabama	2	\$1,738,661	
Arizona	3	730,838	\$ 365,419
Arkansas	4	2,768,535	2,268,535
California†	2	11,993,222	5,996,611
Colorado	2	1,725,957	819,830
Connecticut‡	1	978,283	978,283
Delaware	2	304,392	304,392
Florida	3	3,658,677	2,575,199
Georgia	3	4,527,471	1,509,157
Idaho	2	545,672	545,672
Illinois	—	†	—
Indiana	2	4,925,372	4,187,855
Iowa	—	†	—
Kansas	—	†	—
Kentucky	3	1,660,938	1,660,938
Louisiana	2	1,335,320	1,335,320
Maine	1	522,250	522,250
Maryland	2	1,588,422	1,111,895
Massachusetts	—	†	—
Michigan	*	†	—
Minnesota	—	†	—
Mississippi‡	3	1,648,748	787,319

Lackawanna Trail, which runs from Delaware Water Gap through the Pocono Mountains in Pennsylvania. The unique street referred to is Lombard Street, San Francisco, a twisting thoroughfare which climbs a steep hillside at 30 per cent grade in much the same manner as a grapevine climbs a pole.

The shortest street in the world, for instance, is to be found, not in the United States, but in France. It is the Rue Ble, in Paris. The narrowest street in the world is the Via Sol, in Havana, Cuba, a thoroughfare only forty-seven inches in width. The most unique paved motor road in the world is that of the Via Nizza, a roadway constructed upon the roof of the Fiat Motor Works at Lingotto, Italy.

To Nankin, China, goes the rather doubtful credit to having the dirtiest street in the world—the Tchantsi. The Via Castile, in Seville, Spain, has long had the distinction of being the cleanest street in

States	Tax rate per gal. on Dec. 31, 1924 cents	Gross receipts, 1924	Amt. applied to road work under supervi- sion of state high- way departments
Missouri	—	†	—
Montana	2	619,295	123,859
Nebraska	—	†	—
Nevada	2	162,596	60,000
New Hampshire	2	587,845	587,845
New Jersey	—	†	—
New Mexico	1	194,983	185,234
New York	—	†	—
North Carolina	*3	4,529,048	¶4,520,000
North Dakota	1	442,969	—
Ohio	—	†	—
Oklahoma	2½	2,983,501	1,544,600
Oregon	3	2,698,778	2,582,890
Pennsylvania	2	9,089,541	—
Rhode Island	—	†	—
South Carolina‡	3	2,186,137	728,889
South Dakota	2	1,205,155	1,106,635
Tennessee	*2	1,812,235	1,812,235
Texas	1	3,892,769	2,919,577
Utah‡	2½	684,361	682,985
Vermont‡	1	230,865	230,865
Virginia	3	3,313,188	¶2,208,571
Washington	2	2,635,411	2,635,411
West Virginia	2	1,231,944	1,231,944
Wisconsin	—	†	—
Wyoming	*1	200,319	200,319
District of Columbia	2	380,792	380,792
Totals	—	\$79,734,490	\$48,711,326

‡Data given covers calendar years, except for the following State, where fiscal years end as shown: California, Jan. 31; Connecticut, June 30; Mississippi, South Carolina, Utah and Vermont, Nov. 30. ¶Approximate. *To date in 1925, these States have enacted new gasoline tax rates effective as follows: Florida, 4 cts. (July 1); Kansas, 2 cts. (May 1); Michigan, 2 cts. (Feb. 15); North Carolina, 4 cts. (Mar. 5); Tennessee, 3 cts. (Feb. 9); Wyoming, 2½ cts. (March). †No tax.

Although 35 states impose a gasoline tax, it affects only about half of the motor vehicles, since several of the states which do not impose a tax have large registrations. The amount paid annually by the average motorist where the tax is collected is \$10.30 per vehicle.

the world. Fifth Avenue, New York City, harbors more wealth than any other thoroughfare, although Grosvenor Street, London, is the most aristocratic.

To Pearl Street, New York City, is granted the palm as the noisiest street in existence, while it is a matter of dispute as to whether Michigan Avenue, Chicago; Columbus Circle, New York City, or New York Avenue at Fourteenth Street, in Washington, D. C. is the most dangerous street to cross.

The most dangerous road in existence is the Corniche road, which winds its way above the Mediterranean from Laturbia to Nice in France, along one edge of which for many miles there is a sheer drop of 1,000 feet. Broad Street, Philadelphia, fourteen miles long, is the longest straight street in the world, and Broadway, New York, fifteen and one-half miles in length, is the longest.—Roads & Road Construction, London.

Will Number and Mark the Highways

Secretary of Agriculture Names Board of Federal and State Officials to Select Uniform Numbers and Safety Devices for All Interstate Roads

A very important step toward the uniform numbering and marking of highways of interstate character was taken recently when Mr. Howard M. Gore, Secretary of Agriculture, appointed a board, composed of officials from the Bureau of Public Roads and the State Highway Departments to jointly prepare a plan and secure its adoption by the various states.

The members of this joint board with power to do this work are as follows:

Thomas H. MacDonald, chief of the Bureau of Public Roads, Washington, D. C., chairman.

E. W. James, chief of design, Bureau of Public Roads, Washington, D. C.

A. B. Fletcher, consulting highway traffic engineer, Bureau of Public Roads, Washington, D. C.

Frank F. Rogers, State Highway Commissioner, Lansing, Mich.

C. M. Babcock, Commissioner of Highways, St. Paul, Minn.

A. H. Hinkle, Superintendent of Maintenance, Indianapolis, Ind.

James Allen, State Highway Engineer, Olympia, Wash.

Cyrus S. Avery, chairman State Highway Commission, Tulsa, Okla.

L. A. Boulay, Director of Highways and Public Roads, Columbus, Ohio.

O. A. Brown, State Highway Commissioner, Bismarck, N. D.

James A. French, State Highway Engineer, Santa Fe, N. M.

C. P. Fortney, chairman State Road Commission, Charleston, W. Va.

Frederick Stuart Greene, Director of Public Works, Albany, N. Y.

W. O. Hotchkiss, chairman State Highway Commission, Madison, Wis.

John A. MacDonald, Highway Commissioner, Hartford, Conn.

C. H. Moorefield, State Highway Engineer, Columbia, S. C.

Robert M. Morton, State Highway Engineer, Sacramento, Cal.

B. H. Piepmeier, Chief Engineer, Jefferson City, Missouri.

Henry G. Shirley, chairman State Highway Commission, Richmond, Va.

William G. Sloan, State Highway Engineer, Trenton, N. J.

Wm. F. Williams, Director of Public Works, Boston, Mass.

Wm. F. Williams, Director of Public Works, Boston, Mass.

Commenting upon the very important duties of this board and the helpful results which will undoubtedly come from their action, Mr. Gore said: "The Association of State Highway Officials has

been giving earnest consideration to this matter for several years, and each state, as an individual unit, has been passing ordinances, erecting signs, eliminating railroad crossings and using the generous space in the daily press to teach public safety methods of highways transportation."

"There have been a number of safety council meetings and gatherings of various groups interested not only in highway safety, but in highway convenience, which have from time to time published their suggestions, but it has been found that there have been so many divergent views and conflicting ideas that the general public in traveling over the highways through the several states encounter considerable confusion because of the great variety of direction signs and danger signals."

"This move to co-ordinate the work of the various states through this governmental agency is just another proof that the Federal government in its co-operation with the states is doing a vital work which would not otherwise be accomplished if entire dependence was placed upon the states themselves."

"This joint board will not only adopt uniform signs and danger signals to be approved by the states, but they will also number the main highways throughout the country. The purpose of this is to simplify traveling directions for the public so that a person traveling from New York through Chicago to San Francisco may be able to do so by following a certain number all the way. Then also every danger sign will mean the same in every state. It is believed that these measures will add much to the safety of the traveling public as well as to their convenience and personal comfort. You would be surprised if you knew the additional expense met by the public in the unnecessary mileage traveled because of misdirection or no direction at all."

"Thirty-eight state legislatures are now in session and while a few states have not legislation on their statute books to provide for this co-ordinating work a vast majority already have that authority and it is expected that the remaining states will gladly fall in line."

"This board is being formed at the unanimous request of state highway departments who have been studying the question for several years and I am only too glad to co-operate with them in bringing about this much-needed national consideration of the great traffic demands for uniform traffic regulations throughout the country."

The United States has four times as many automobiles as all the rest of the world together. We might adopt as our national flower the carnation.—Arkansas Gazette.

He has no brains
Beneath his hair
Who starts a trip
Without a spare.

Legislation Affecting Highways Before the 68th Congress

(American Highways)

The last Congress had before it several matters of legislation affecting highways. As usual, more bills were introduced than became laws. The following were of most general interest:

Bills Which Became Laws

Dowell Bill (H.R. 4971), authorizing appropriations under the Federal Highway Act \$75,000,000 for the fiscal year 1926, \$75,000,000 for fiscal year 1927; and for forest roads and trails \$7,500,000 for the fiscal year 1926 and \$7,500,000 for the fiscal year 1927. This bill also makes organic law that all authorizations for roads shall hereafter be apportioned to the States by the Secretary of Agriculture on January 1 of each year. Non-taxable Indian lands are hereafter to be considered as "unappropriated public lands" in the operation of the Federal Highway Act.

Temple Bill (H.R. 4522), to complete topographic survey of the United States.

Reece-Capper Bill (H.R. 7269), directs the Secretary of War to transfer to the Secretary of Agriculture 100 5-ton tractors and 1,000 trucks for use on roads.

Pan American Congress of Highways (S. J. Res. 190) authorizes the President of the United States to appoint a commission of five to attend the Pan American Congress of Highways at Buenos Aires, October 3, 1925. This Congress is the result of the visitation made in June of last year to this country of representatives of all the Pan American countries who visited many of our highways under the escort of the State highway departments.

Bills Which Did Not Become Laws

Colton Bill (H.R. 6133). This bill provided that in the case of any State containing unappropriated public lands exceeding 5 per centum of the total area of all lands in the State in which the population does not exceed 10 per square mile of area Federal aid up to 100 per cent may be used on the primary system.

Also in the case of any project involving construction in mountainous, swampy, or flood lands on which the average cost per mile for the grading and drainage structures other than bridges of more than 20 feet clear span, will exceed \$10,000 per mile; and also in the case of any project which, by reason of density of population or character and volume of traffic, the State Highway Department and the Secretary of Agriculture may determine should be improved with a surface of greater width than 20 feet, the Secretary of Agriculture may pay more than \$15,000 per mile. In no event shall the payments of Federal funds on any project under this proviso exceed 50 per centum of the cost of the project, except as such payments are authorized to be increased in the public-land States.

That in apportioning appropriations for forest roads no State entitled to share in such appropriations shall receive less than \$20,000 of each year's allotments. This bill will be reintroduced in the next Congress.

Naming Oregon Trail (S. 2053). Passed Senate, died in Committee on Roads of the House after extensive hearings.

Reorganization Bill (H.R. 9629). This bill provided for the transfer of the Bureau of Public Roads to the Department of the Interior and the creation of a new Department of Transportation in the Department of Commerce. This bill did not get to the floor of either House of Congress. It will be re-introduced in the next Congress.

Denison Bill (H.R. 10468). This bill proposed granting privilege of erecting toll bridges under certain restrictions. No action was taken in either House of Congress. Will be reintroduced in the next Congress.

Damaged Enough Already

Lawyer (helping pedestrian up)—"Come with me, my man. You can get damages."

Pedestrian (groggy)—"H'vens, man, I got all the damages I want. Get me some repairs."—New Smyrna Breeze.

It is true that our basic law says that every American is entitled to "the pursuit of happiness"—but not at the rate of fifty miles an hour.—Norfolk Virginian-Pilot.

Reinforcing Bars for Concrete

Made in the United States from new billet steel.

Intelligent, dependable service by expert bridgemen.

Dudley Bar Company

BIRMINGHAM, ALA.



Project 40-E.

Highway Engineers Protect Taxpayers

Now and then we hear someone complain about the high cost of engineers employed on our roads, says Colorado Highways, a state publication, and a word or two of explanation may not be amiss.

In the first place, to have good roads—and good roads mean modern roads—roads that will sustain modern traffic—it requires the services of good engineers. The old system of building a road by the winding route was scrapped long ago.

Today roads are built as straight as possible and over the shortest route possible between two given points. Modern traffic demands that they be built on easy grades to get easy grades and good alignment necessitates the employment of engineers.

Engineers are the best protection the tax payer has in getting his money's worth in roads. Thousands of dollars are saved the traveling public in reduced travel costs on the roads now being constructed in this state.

Not every road that is surveyed is actually built. Sometimes it is necessary to make two or three surveys to find the cheapest and best route. Surveys are necessary to eliminate costs. A prominent railroad chief engineer in his instructions to field men says that a survey intelligently made, but not used, is just as valuable to his road as one that is used.

The engineer is the agent of the people. He is on the job every minute from the time a project is started until it is finished, and sees to it that the people get their money's worth.—The Nation's Highways.

Work hard and save your money and when you are old you can have the things only young people can enjoy.—Columbia Record.

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POLARINE
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STANDARD OIL COMPANY
INCORPORATED IN KENTUCKY

For Better Roads



Twenty miles of Penetration

"ENSLEY" & "ALA CITY"
BASIC SLAG
CRUSHED & SCREENED

Macadam on the Dixie Highway

One good Slag road job leads to another. The first ten mile section (F. A. P. No. 114 shown above)—laid on clay gravel base in 1924 by Sam E. Finley of Atlanta—runs south on the Dixie Highway from Waycross, Ga., towards Jacksonville.

The second section starts at the Duval County line, just north of Jacksonville, and passes through Callahan on towards the Georgia state line. This paving—laid in 1924 on Florida rock base by State Road Dept. (F. A. P. No. 32)—is now being extended to connect with the Georgia highway.

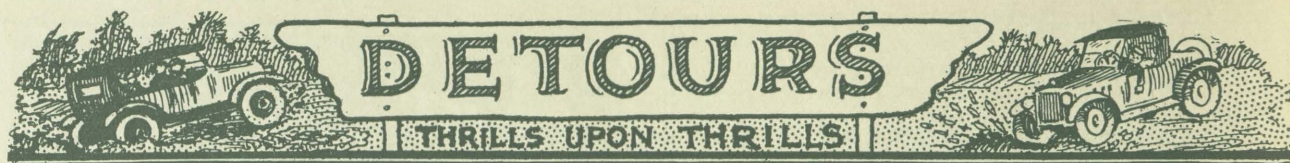
The uniformly good results obtained with scientifically prepared Basic Slag in Penetration Macadam pavements are evidenced in a total of more than 200 miles of this type of paving in the Southeastern states.

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Cussing and Cussing

"Some folks cusses bout de cost of good roads, but dey learnt HOW to cuss travelin' over bad roads."
—Hambone.

It is reported that Eddie Rickenbacker has made a fortune as a motor car manufacturer. Well, doesn't the ace always take the jack?—Springfield Leader.

Retort

Mr.—"The prettiest women always marry the biggest fools."

Mrs.—"Try your flattery on somebody else."—The American Legion Weekly.

Who's Loony Now?

A man in a hospital for mental cases sat fishing over a flower bed. A visitor approached, and, wishing to be affable, remarked:

"How many have you caught?"

"You're the ninth," was the reply.—DePauw Daily.

Autos killed 19,000 last year, not counting those who worked themselves to death paying bills.—Columbia Record.

A New York beggar was found to have a home in the country and two automobiles. That's enough to make a beggar out of anybody.—Southern Lumberman.

A New Yorker mistook a jug of sulphuric acid for moonshine, but unless one is a connoisseur these small errors make little practical difference.—Detroit News.

A scientist estimates that the earth will last about about a hundred million years longer. This should give the European nations plenty of time to settle their war debts.—Life.

Here lies the body of Booby Hatch
Who looked in the tank with a lighted match.
Parts of Booby were never found,
But those collected are under this mound.

Seek to Have Protection

"Ma," said the newspaper man's son, "I know why editors call themselves 'we'."

"Why?"

"So's the man that doesn't like the article will think there are too many for him to lick."

In connection with science's efforts to increase the longevity of the race it must at least be admitted that the age of discretion has been delayed.—Detroit News.

Taking No Chances

Visitor (in early morning, after week-end, to chauffeur): "Don't let me miss my train."

Chauffeur: "No danger, sir. The mistress told me it would cost me my job if I did."

Little Willie—"I don't want to go to that damn school any more!"

Father (a bricklayer): "Why, Willie, where did you ever learn such a word as that?"

"Why, William Shakespeare uses words like that."

"Well, then, quit runnin' around with him."—Los Angeles Two Bells.

If Henry Ford really is going to make airplanes there is a fortune for some one in selling steel helmets.—Columbia Record.

STAY IN THE ROAD

Do setbacks put you forward,
Or do they send you back?
Do obstacles along life's road
Cause you to leave the track?
The road builder encounters rocks
But watch and you'll observe,
His course is laid, he follows it;
And nothing make him swerve.
His business is to build a road;
All that he wants to know
Is where this road is leading to,
And that's where he will go.
An obstacle encountered,
Of course, will cause delay;
Yet once laid out, it's up to him,
To clear the right of way,
Lay out your course and stick to it,
Don't kick about your load;
Decide where you are headed for,
And then stay in the road.
—Texas Highway Bulletin.

Once Merry Optimists

The man who tried to get Los Angeles the night company came in to hear his radio.

The man who bought pre-war stuff from a strange bootlegger.

The man who thought it was all right for his son to have a car of his own.

The man who thought a flivver was a match for an express train.

The man who thought a husband was head of the house.

Those still living are among our leading pessimists now.—Cincinnati Enquirer.

Modern Nursery Lore

Dorothy—"I've looked all through this Mother Goose book, but I can't find that poem about 'Little Bo-Peep Has Lost Her Sheik.'"—Life.

Wm. P. McDonald Construction Co.

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Spencer-Futch Building,
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Diamond Sand Company

LAKE WALES, FLORIDA

On or before June first, the above company will commence operation at Diamond, about four miles east of Lake Wales, Florida, producing a Class "A" Concrete Sand

Screened and Double Washed

with a daily capacity of thirty-five to forty cars.

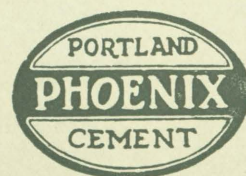
Copies of the Pittsburgh Laboratory analyses of "DIAMOND SAND" and samples furnished on application.

May 12, 1925

For sample, price, freight rates, and further particulars, apply to

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THE MANY MILES OF CONCRETE
HIGHWAYS IN FLORIDA PROVE
THE SUPERIORITY OF THIS TYPE
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STANDARD SINCE 1898

Phoenix Portland Cement Company

PLANT NO. 1
1,000,000 bbls.
annually
Nazareth,
Pa.

PLANT NO. 2
1,500,000 bbls.
annually
Birmingham,
Ala.

PLANT NO. 3
(To be constructed)
New Orleans,
La.

Status of Road Construction

THROUGH MAY 31st, 1925.

Project No.	Contractor.	Road No.	County	Total Length Miles	Clearing Miles	Grading Miles	Base Miles	Surface Miles	Per Cent Type Complete
26	C. F. Lytle.....	2	Columbia	11.01				5.81	C. 52.82
37-D	Fla. Drainage & Const. Co..	2	Alachua	2.14	2.14	1.39			G. 65.00
40-A	C. F. Lytle.....	4	Brevard	16.17	15.68	13.26	11.32	0.00	S.T. 73.00
40-D	J. Y. Wilson.....	4	Brevard	6.72	6.72	6.72	6.72	0.00	S.T. 97.00
43	Wm. P. McDonald Const Co.	2	Marion	10.44	10.44	9.91	9.40	0.00	S.A. 47.00
44	Southern Pav. & Const. Co.	2	Lake	10.53	10.53	10.53	10.53	8.78	B.C. 93.00
46	B. Booth & Co.....	3	Nassau	11.52	8.06	1.73			G. 14.66
47	Boone & Wester	4	St. Johns	14.96	.65	0.00			G. 0.07
514	State Forces	1	Jackson	11.00	0.00	0.00		0.00	S.C. 8.40
534-A	J. D. Donahoo & Sons.....	24	Brevard	2.65	2.65	2.22	0.00	0.00	S.T. 82.00
534-B	Noll & Noll.....	24	Brevard	11.85	11.85	11.85	7.70	0.00	S.T. 65.00
564-A	Broadbent Const. Co.....	5	Charlotte	10.88	10.33	8.70	4.35	0.00	S.T. 81.00
567	State Forces	1	Walton	21.35	20.71	12.59		4.27	S.C. 51.00
571	Hunter & Gladwell.....	1	Madison	14.73	14.73	14.70		11.08	S.C. 95.00
574	Duval Engr. & Const. Co...	9	Madison	11.66	11.66	11.66	10.03	5.83	S.T. 90.00
576	S. T. Buchanan & Broad-								
	bent Const. Co.....	5	Sarasota	5.68	5.68	5.51	5.05	0.00	S.T. 90.00
581	Barnes & Smith.....	5	Hillsborough ...	12.10	5.32	2.90	0.00	0.00	S.T. 5.00
586	State Forces	1	Jackson and Washington ..	17.37	12.16	9.72		7.12	S.C. 68.80
588	Morgan-Hill Paving Co....	8	Putnam	2.34	2.10	2.34	1.28	0.00	S.A. 33.30
597	J. Y. Wilson.....	4	Volusia	16.29	16.29	13.19	8.14	0.00	S.T. 70.40
598-B	State Forces	1	Jefferson	7.80	7.80	7.80		7.80	S.C. 100.00
604	C. F. Lytle.....	4	Volusia	7.72	7.56	6.56	5.48	0.00	S.T. 86.00
607-B	Whitney Const. Co.....	13	Clay	6.76	6.76	6.76	0.00	0.00	S.T. 39.00
608	C. F. Lytle.....	4	Brevard	9.25	9.25	9.25		5.83	C. 70.00
612	State Forces	1	Leon	17.58	17.58	15.82		14.06	S.C. 86.80
613	State Forces	5	Sarasota	4.62	4.16	3.00	0.00	0.00	S.T. 20.00
621	State Forces	1	Okaloosa	15.17	0.00	0.00		0.00	S.C. 0.00
623	State Forces	35	Madison	12.32	5.17	4.31		0.00	S.C. 18.30
627	State Forces	2	Putnam	6.27	3.38	2.51	0.00	0.00	S.T. 14.17
628	L. M. Gray.....	3	Volusia	9.92	9.92	9.42	0.00	0.00	S.T. 30.00
629	H. E. Wolfe.....	8	Highlands	6.00			0.00	0.00	S.T. 0.00
630	Myers Construction Co....	8	Highlands	11.00			6.60	0.00	S.T. 66.00
633	Taylor Contracting Co....	1	Gadsden	9.67	0.00	0.00		0.00	S.C. 0.00
634	State Forces	1	Jackson	11.07	5.53	4.98		3.32	S.C. 41.70
636	C. F. Lytle	8	St. Lucie	12.20			1.97	0.00	S.T. 17.00
637	State Forces	10	Leon	18.08	11.75	3.62		0.00	S.C. 22.90
639	Taylor Contracting Co....	1	Gadsden	9.83	0.00	0.00		0.00	S.C. 6.47
642	B. Booth & Co.....	3	Putnam	10.82	0.00	0.00			G. 0.00
647	O. Hardin & H. E. Wolfe..	8	Highlands	7.00		1.05	0.00	0.00	S.T. 2.00
651	State Forces	6	Calhoun	14.72	0.00	0.00		0.00	S.C. 0.00
655	State Forces	18	Highlands	13.26	3.97	1.32			G. 12.00

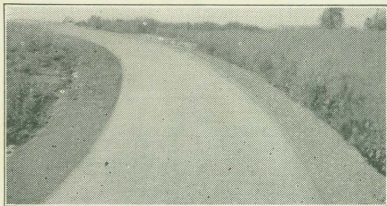
TOTAL MILES COMPLETE

	Concrete	Brick	B.C.	S.A.	B.M.	Asp. Blk	S.T.	S.C.	Marl	Grad.	Total
Complete April 30, 1925.....	115.18	12.44	9.50	45.27	71.50	23.20	288.67	325.04	37.08	39.75	967.63
May, 1925	3.35		.50	1.50			12.38	6.81		2.74	27.28
Total to date.....	118.53	12.44	10.00	46.77	71.50	23.20	301.05	331.85	37.08	42.49	994.91

	Clearing Miles.	Graded Miles.	Base Miles	Surface Miles.
Complete April 30, 1925.....	1,069.27	1,022.49	379.07	938.33
May, 1925	14.82	16.93	15.91	16.20
Total to date.....	1,084.09	1,039.42	394.98	954.53

Note—The above tabulation shows only those projects that are actually under construction at the present time and does not show projects that have been previously completed. However, the table, "Total miles completed," at the foot includes all projects that have been completed prior to May 31, 1925, and the amounts completed in May also. The abbreviations used are as follows:

C.—Concrete. S.A.—Sheet asphalt. B.M.—Bituminous macadam. R.—Rock base. S.C.—Sand clay. G. & D.—Graded and drained. S.T.—Surface treated. B. C.—Bituminous concrete.



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This road runs through seven miles of swamp along Lake Erie near Cedar Point, Ohio, and has given ample proof during several years' service that Carey Elastite Expansion Joint protects concrete under all conditions. Elastite Expansion Joint is easy to install and quickly available anywhere for any job. Warehouses in all principal cities.

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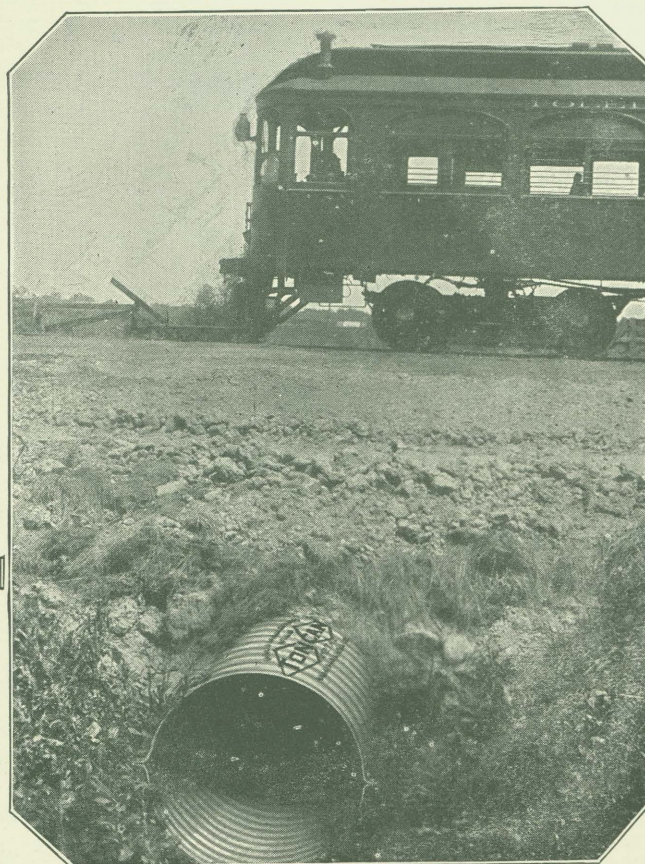
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cut
maintenance
costs



Culverts
reduce
labor
expenses

Quality

Service



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T. J. APPEYARD, PRINTER, TALLAHASSEE, FLORIDA

INSTALLED
1912

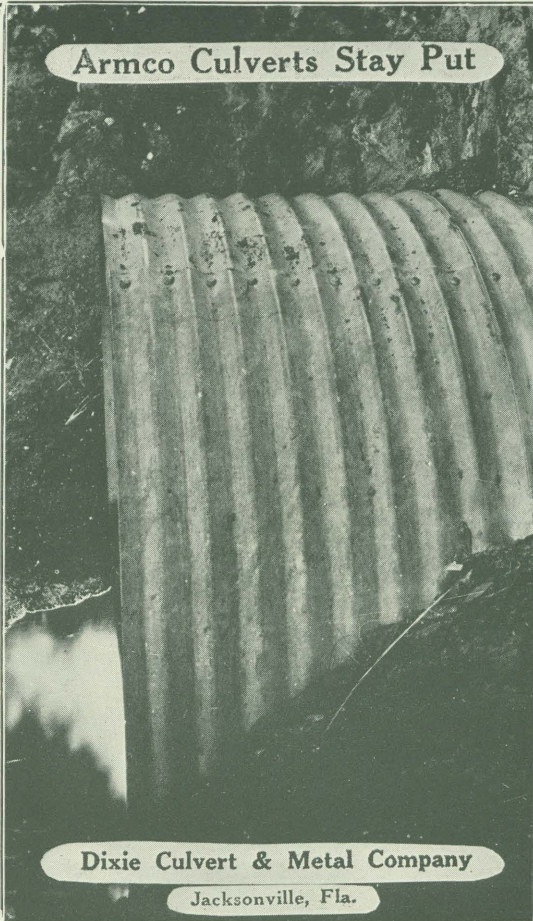
UNRETOUCHED

"CLOSE-UP"
of 60-inch ARMCO 52
feet long

CITY OF
**DAYTONA,
FLORIDA**



Armco Culverts Stay Put



Dixie Culvert & Metal Company

Jacksonville, Fla.

INSPECTED
1923

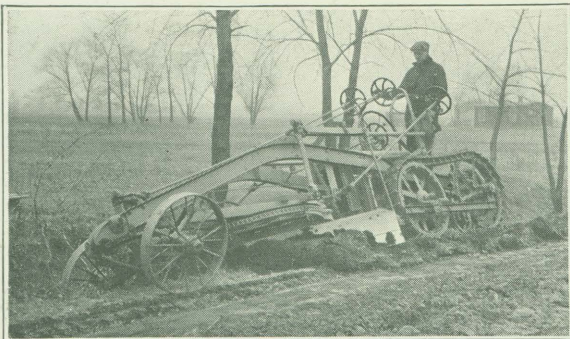
Condition Pronounced

EXCELLENT

By

W. R. BABINGTON,
Superintendent Streets,

in September, 1923, after
cleaning out a few inches
of sand



Working on a Shoulder

The above picture illustrates a Motor Grader that is actually grading, and doing it according to the high standard of performance which is typical of all Austin Graders. Note the leaning front wheels which alone enable it to work with any degree of satisfaction under conditions similar to the one illustrated above.

This feature is exclusively Austin and is alone enough to account for the greater, all around efficiency of the machine.

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